

**PERBEDAAN KEKUATAN TARIK SEMEN RESIN *SELF-ADHESIVE*  
BERBAHAN DASAR 4-METACRYLOXYETHYL TRIMELLITATE  
ANHYDERIDE/ METHYL METHACRYLATE TRI-BUTYLBORANE  
DAN GLYCEROL PHOSPHATE DIMETHACRYLATE  
TERHADAP DENTIN DAN RESTORASI  
RESIN KOMPOSIT INDIREK**

**INTISARI**

Semen resin *self-adhesive* merupakan inovasi dalam kedokteran gigi yang memiliki banyak keunggulan dalam penggunaannya sebagai semen *luting*. Kekuatan pelekatan material tersebut dapat diuji menggunakan uji mekanik, seperti uji tarik indirek. Kekuatan tarik suatu material semen dapat dipengaruhi oleh komposisi dan aplikasi dari semen itu sendiri. Tujuan penelitian ini yaitu untuk mengetahui perbedaan kekuatan tarik antara dua semen resin *self-adhesive* dengan teknologi yang relatif baru yaitu semen resin *self-adhesive* berbahan dasar 4-META/ MMA TBB dan GPDM.

Empat belas spesimen dibagi menjadi 2 kelompok ( $n=7$ ). Kelompok pertama menggunakan semen resin *self-adhesive* berbahan dasar 4-META/ MMA TBB sebagai semen *luting* antara strukur dentin gigi dan restorasi resin komposit indirek. Kelompok kedua menggunakan semen resin *self-adhesive* berbahan dasar GPDM. Seluruh spesimen disimpan dalam saliva buatan selama 24 jam dalam inkubator dengan suhu  $37^{\circ}\text{C}$  kemudian dilakukan uji kekuatan tarik indirek menggunakan *Universal Testing Machine*. Data hasil uji kekuatan tarik pelekatan antar kelompok dianalisis menggunakan uji t tidak berpasangan dengan signifikansi 95% ( $\alpha=0,05$ ).

Hasil uji t tidak berpasangan menunjukkan bahwa terdapat perbedaan signifikan ( $p<0,05$ ) antara kekuatan tarik indirek semen resin *self-adhesive* berbahan dasar 4-META/ MMA TBB dan GPDM. Kesimpulan penelitian ini adalah kekuatan tarik semen resin *self-adhesive* berbahan dasar 4-META/ MMA TBB lebih tinggi dibandingkan semen resin *self-adhesive* berbahan dasar GPDM dikarenakan perbedaan komposisi dan aplikasi yang dimiliki masing-masing semen.

Kata Kunci : Semen resin *self-adhesive*, 4-META/ MMA TBB, GPDM, Kekuatan tarik indirek

**COMPARISON OF INDIRECT TENSILE BOND STRENGTH BETWEEN  
4-METHACRYLOXYETHYL TRIMELLITATE ANHYDERIDE/  
METHYL METHACRYLATE TRI-BUTYLBORANE AND  
GLYCEROL PHOSPHATE DIMETHACRYLATE BASED  
RESIN CEMENT USED TO BOND INDIRECT  
COMPOSITE RESIN RESTORATION TO  
DENTIN STRUCTURE**

***ABSTRACT***

Self-adhesive resin cement as luting cement is an innovation in dentistry which has many advantages. The bond strength of the cement could be tested by some mechanical test such as indirect tensile strength. The tensile strength of cements could vary caused by its own composition and application. The aim of this study is to prove and demonstrate the indirect tensile strength difference between two new innovation of self-adhesive resin cement. The first cement is based of 4-META/ MMA TBB and the second cement is based of GPDM monomer.

Fourteen specimens were divided into 2 groups (n=7). First group used 4-META/ MMA TBB based cement as a luting cement between dentin structure and indirect composite restoration. Second group used GPDM as the luting cement. All specimens were immersed in artificial saliva for 24 hours in 37°C incubator. After the immersing process, those specimens were tested by the *Universal Testing Machine* for the indirect tensile strength test. The data of the testing was analyzed with independent t-test with 5% significance ( $\alpha=0,05$ ).

The result of independent t-test showed there are great significance difference ( $p<0,05$ ) of the indirect tensile strength between 2 groups. The conclusion of this study is the 4-META/ MMA TBB based cement has higher indirect tensile strength than the GPDM based cement caused by the differences of composition and application.

**Keywords :** *Self-adhesive* resin cement, 4-META/ MMA TBB, GPDM, Indirect tensile strength